G. R. S. IX-5)

Previous references.

1921.

(Dec)

File No. 60-

Serial Nos 1, 2
3-10. 10a, 11-

Later references.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. 15

Part B for Jan 22

SUBJECT.

Leave to file a specification in respect of an invention for "Improvements in or relating to apparatus for use in carrying out endothermic Chemical reactions under high temperatures & pressures."

A18) No. 3035 of 23.11.21 Authorising the applicant to file a specification.

A11) No 3848 of 11.1.22 Notifying the filing of the specification in respect of the invention referred to therein.

WD 1688—GPB—16,626—28-7-21

Rec'd 11/8/21

(1

G. R. S. 11] 1921.

GENERAL AND REVENUE SECRETARIAT.

(Ste)

NOTES.

File No. 60-21

FILE HEADING.

Inventions for "Improvements in or relating to Apparatus for use in Carrying out Exothermic Chemical Reactions under high temperatures & pressures".

From

Messrs. W. Grant Rose. Solicitor. 2 Hastings Street Calcutta.

No. Dated 26.7.21 Received 1.8.21

Diary No. 777	Enclos. Application in duplicate Drawings Spare Copies Power of attorney Assignment Specification in duplicate.	Serial No. 1

BRIEF ABSTRACT OF LETTER.

Forwards an application for leave to file a specification on behalf of his clients L' Air Liquide Societe Anonyme Pour L. Etude Et L' Exploitation Des Procedes Georges Claude in respect of an invention referred to therein.

NOTES AND ORDERS.

A sum of Rs 12/- was received in the Cash Sec[t] on 1-8-21. out of which an was eight to be returned to the Solicitor.

Submitted with usual drafts for orders.

J. K. Schroeder 6/8/21

1/11/8

Done

Mm

12/8

NOTES—First Sheet.

19-8-21 11-21 1281 (2

G. R. S. III-2.

General and Revenue Secretariat. | 9/c File No. 65 of 19 21.

Serial No.	
2A	From the Treasury Officer, Mt Hurgan Dist. No 423 dt 15-8-21 Acknowledges the receipt of Rs 10/-
2B	To the Grant Note Dist No 1195 dt 23-8-21 Notes that the application referred to in Sl 1 is receiving attention & returns the same as 8/-
3	To the Dist Bd of Pe Advice 1196 dt 23-8-21 Forwards the application for opinion of the Bd
4	To the Asstt of Stamps No 1197 dt 23-8-21 Forwards the power of attorney & the deed of assignment for being impressed with the Stamp & returned
5	From the Same Officer 8.2 dt 29-8-21 Returns the documents referred to in Sl 4 & requests an acknowledgment Submitted into a draft AAS 2-9-21
6.	To the Supdt of Stamps. Nellore No dt. 7-9-21 Acknowledging receipt of the Sl. 5 with enclosures

NOTE—Contn. sheet.

G. R. S. III-2.

General and Revenue Secretariat.

Pr. File No. 60 of 1922.

Serial No.	
	Specifications in respect of the inventions referred to therein.
12	No 3848 dt 11.1.22 forwarding a copy of the notification in Sl 11.
13	No 3849-51 dt 11.1.22 to the Supdt Govt Museum, the Chief Engr. & the Secy Bd of Sc. Advice forwarding for record in their respective offices a copy of the Specifications referred to.

NOTE—Contn. sheet.

Rec'd by post
Jan 11 6-21-22

3568

Dno 772 (5
8-2-22
Dte. 60-21-1

From

Mr. W. Grant Rose
Solicitor

2 Hastings Street
Calcutta.

GEN & REV
1 AUG 1921

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore
General and Revenue Secretariat
Bangalore.

Calcutta 26th July 1921.

Sir,

I beg to enclose herewith the necessary papers in respect of an application for leave to file a Specification on behalf of my clients L'Air Liquide Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude in respect of an invention for "Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures.

The following papers are enclosed herewith namely :-

(1) Application in duplicate
(2) Drawings one sheet in duplicate
(3) Power of attorney
(4) Assignment
(5) Specification in duplicate.

I am sending you a money order for Rs.12/- of which Rs.1/- is for the Mysore Government Stamp on the Power of attorney and Re.1/- for the Mysore Government Stamp on the assignment and Rs.10/- being the prescribed fee for the application.

I may mention that the present application is based

on

(6

on my clients Indian application No.5729 of 1920 which was [illegible]
accepted on the 10th June 1921 but the Indian Patent has
not yet been issued.

I have the honour to be,

Sir,

Your most obedient servant,

W Grant Rose

Enclo:

COUPON. The remitter may write here any communication to the payee.

Rs. 12/- As. _____ Amount remitted in respect of Patent application to Dewan of Mysore on behalf of L'Air Liquide etc corresponding to Dedrain Patent application No. 6729 of 1920.

J. W. Grant. Rose, Solicitor
12 Hastings Street, Calcutta
Remitter.

(1)

(This List will be receipted and returned by Press to the Branch.)

MGCPB—10,000—8-4-05

Recorder.

[G. R. S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to 777

Section 9(1)

File No. 60-21

Serial No.

General and Revenue Secretariat

( )

No. 1193

, *the* 191 .

Date of issue 23/8/21

Signed by

To

M. Grant Rose Esq

Solicitor - 2 Hastings

Street Calcutta

Sir,

With reference to your letter

of 26. 7. 21 forwarding

an application for leave

to file a Specification

in respect of an invention

for "Improvements in or

relating to apparatus for

use in Carrying out Exothermic

over.

Chemical reactions under high temperatures & pressure, I am directed to state that the Asst is receiving the directions of Govt. Board that a sum of eight annas is retained back, * since the Values Stamps required for assignment deed is only eight annas.

Thanks &c.

* Included in the D.O. of R.C-14 Secretary Board (letter no. 935 of 15/16 Dec 50. 2-7)

List of enclosures.

Copied by

Examined by

11/VI 9 C 60-21-24

(10

G.R.S. 27]

GENERA

SE

(Continua

Duplicate.

(To be returned to the General and Revenue Secretariat for being placed in the file.

1. No. 423
2. Date of Remittance. 15/8/21
3. From whom received. Mr. W. Grant — Rule - Solicitor 2 Hastings Street Calcutta
4. Date of receipt of amount in the General and Revenue Secretariat. 1.8.21
5. On what account. Appn Fee in respect of Revision No 11 of 21-22
6. Amount (in figures and words) 10/— Ten Rupees only.
7. The head to which it should be credited.

(To be filled in by the Treasury.)

M Ramachandra

Secretary to Government,
General Department.

STATE HUZUR TREASURY AUG 15 1921 BANGALORE.

The above amount has been duly received and credited in the Treasury on this date.

Date

Ramappa

Hd. Acctt. *Treasurer.* *Try. Officer.*

N. B.—Both the counterfoil and the duplicate to be returned to the General and Revenue Secretariat duly signed by the Treasury Department.

G. R. S. VI.—s-v/16]

(11

DRAFT.

SUBJECT.....

.....

.....

Section. Pte
File No. 60 - 21
Serial No. 3

Diary No. of letter replied to.....

No. 1196/Rules 3

To

The Secy. Bd of
Sc. Advice
Bangalore

GENERAL AND REVENUE SECRETARIAT,
'( )
, *the*.....*191*

Has the honor to forward herewith for report under Sec. 6, Cl. (2) of the Mysore Inventions and Designs Regulation, XI of 1894, an application for leave to file a specification of an invention for "Improvements in or relating to Apparatus for use in Carrying out Exothermic Chemical reactions under high temperature & pressure" received from

Date of issue 23/8/21

Signed by W. M. S. R.

Mr. W. Grant Rose Solicitor
2 Hastings Street Calcutta
on behalf of his Clients
L'Air Liquide Societe
Anonyme Pour L'Etude
Et L'Exploitation des
Procedes Georges Claude.
48 Rue St Lazare
Paris.

By Order,

M 8/9/16

for Secretary to Government.
Edn Dept

M 14/8/21

List of enclosures.

Copied by.....

Examined by.....

WD 02295 -GPB—1,000—2-3-18

G. R. S. VI—s·v/14]

DRAFT.

SUBJECT.....

.....

.....

Section 24C
File No. 60-21
Serial No. 4

Diary No. of letter replied to.....

R.O 1197/Ends 24 Rs 1½

GENERAL AND REVENUE SECRETARIAT
( )
, *the* ....191 .

To

The Supdg Stamps
Bangalore

Date of issue.....23/8/14.....

Signed by.....MV N.S.R.....

Has the honor to forward herewith a Power of Attorney executed by.....X.....

.....

constituting Mr. V. Grant Rose, Solicitor 2 Hastings Street Calcutta as Agents in respect of ~~his~~ their invention for "Improvements in or relating to apparatus for use in carrying out exothermic Chemical reactions under high temperatures & pressures"

and to request that the same may be impressed with the Mysore General Stamp of the value of Rupee One, also herewith forwarded, and the Power returned to this office. Also a deed of assignment

By Order,

MSN 27/8

For ~~Chief~~ Secretary to Government.

Ed under Sept

X L' Air Liquide Societe Anonyme Pour L' Etude Et L' Exploitation Des Procedes Georges Claude 48, Rue St Lazare Paris

Executed by Georges Claude 48. Rue St Lazare Paris in favour of the Company refd to above is sent with half a rupee & may kindly be impressed with the Stamps of that value & returned

Ed 11/8/14

List of enclosures.

Copied by.....

Examined by.....

WD 02293—GPB—1,000—2-2-18

Dr 1281.

11-21

No: 82
Enc. 2

07847

Mysore Stamp Superintendent's Office
BANGALORE

29th August 1921.
I dc. 60-21-5

13

GEN & REV. SECT.
I & C
29 AUG. 1921

From A. Narasimha Murti Esqr.

Superintendent of Stamps
in Mysore Bangalore.

To. K. Matthan Esqr B. A.,
Secretary to the Government of
H. H. the Maharaja of Mysore,
Education department,
Bangalore

Sir.

I have the honour to forward herewith duly stamped the Power of Attorney and the Deed of Assignment forwarded with your dc. No. 1197/I dc. 60-21-4 dated the 23rd. August 1921, and to request the favour of an acknowledgment.

I have the honour to be,
Sir,
your most obedient Servant,

A. Narasimhamurti.
Superintendent of Stamps
in Mysore.

avbr.

GOVERNMENT OF MYSORE 27 AG 21 1918 ANNAS

$7\frac{1}{2}$/20

15

ASSIGNMENT.

WHEREAS I, GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, Engineer, am in possession of an Invention for "Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures"

Now therefore know ye that for and in consideration of the sum of five shillings to me in hand paid, the receipt of which is hereby acknowledged, I the said GEORGES CLAUDE, have assigned and transferred and by these presents do assign and transfer unto L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, their successors or Assigns, (hereinafter called "the said Assignee") the whole right, title and interest in and to Letters Patent to be obtained for the said Invention from the Government of Mysore the same to be held and enjoyed by the said Assignee to the end of the term or period for which such Letters Patent may be granted, or any prolongation or extension thereof, as fully and entirely as the same could have been held and enjoyed by me had this Assignment not been made.

IN WITNESS whereof I, the said GEORGES CLAUDE, have hereunto set my hand and seal this 22nd day of Décembre 1920.

SIGNED, SEALED AND DELIVERED at Paris in the presence of:-

Georges Claude

L'AIR LIQUIDE Ste anme pour l'Etude et l'exploitation des Procédés Georges Claude 48

Pierre Haulier, Engineer of L'air Liquide residing in Bailly-sur-Seine 3 Rue Alfred Laurent

Gaston Scala Engineer of L'air Liquide residing in Paris 19 Rue Baron

9 Y C 60-21-7

13616

Board of Scientific Advice.

Bangalore, Dated...29th Oct...1921.

NO. 18 / Encl. 9.

FROM

GEN & REV. SE
I & C.
1 NOV. 1921

S. G. SASTRY, ESQ., B.A., M.Sc., (LOND.) F.C.S.,
SECRETARY, BOARD OF SCIENTIFIC ADVICE.
BANGALORE.

TO

B. Ramaswamaiya, Esq,, B.A.,B.L.,
Secretary to Government, General Department,
Bangalore.

SIR,

I am directed to return herewith the following nine applications and to state that leave may be granted to file the specification of inventions contained therein.

I have the honor to be,
Sir,
Your most obedient servant,
Secretary.

11-21 / 60-21 1. For improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures etc.

14-21 2. For improvements in or relating to the production of the walls of enclosures in which reaction takes place under high temperatures and pressures.

13-21 3. For apparatus for effecting exothermic chemical synthesis.

9-21 4. For transformation of synthetic ammonia into a transportable product directly utilisable for agriculture in conjuction with the production of carbonate of soda.

15-21 5. Process for the conversion of synthetic ammonia into a solid product applicable for agricultural purposes.

16-21 6. Processes and apparatus for the direct synthesis of ammonia.

8-21 7. Processes of effecting exothermic chemical synthesis taking place under pressure at a high temperature.

10-21 8. Catalytic materials adapted for use in the synthesis of ammonia.

12-21 9. Protection of the walls of enclosures in which reactions takes place under high temperatures and pressures.

(18

APPLICATION.

TO THE DEWAN OF MYSORE.

THE APPLICATION of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, for leave to file a Specification under Part 1 of the Mysore Inventions and Designs Regulation, 1894.

1. The Applicants are in possession of an Invention for "Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures" they are the Assignees of the Inventor thereof; and, to the best of their information and belief, the Invention is new within the meaning of Part I of the Inventions and Designs Regulation, 1894, and no circumstance exists which, if the Applicants are authorised to file a specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the Invention.

The Applicants have applied for a Patent in British India in respect of this Invention No. 5729 dated 10th day of June, 1920.

2. The following is a description of the invention:-

The apparatus comprises a tube T, assumed to be vertical, and which is protected by means of an inner tube T_1, surrounded by a pile of rings made of thermally insulating material immersed up to N in a molten material which is stable and not very volatile. The upper extremity of the tube T_1 is free to allow clearance for expansion. The other extremity of the tube T_1, terminating in the washer R, is fluid tight. A central tube t is provided both for the admission of the reacting gases and of the electric current and acts as an electrical resistance to produce heat for the purpose of starting the reaction. Furthermore this tube is provided with spikes which enable it to act as a barbed rod for the purpose of introducing the catalysing material without undue packing and preventing any possible movement, the said catalysing material being supported or not by a material such as asbestos.

Thin discs D of earthenware or china threaded on the tube before the spikes are attached prevent the possibility of short-circuiting.

In view of the enormous current density which can be employed owing to the highly compressed atmosphere in which the tube t is immersed, in view of the intensity of the gaseous current flowing through t it is possible to dissipate through the tube, notwithstanding the smallness of its cross-sectional area, a considerable amount of power, equal to or greater than the calorific power which will be developed by the reaction, three kilowatts per metre, for example, with a tube 12 millimetres in diameter. The flow of heat

to the exterior therefore has from the first its full value, and consequently the fall of temperature through the thermally protecting layer also has from the first its full value. This condition is important, for the enclosure T is in this way brought to its normal working condition without having been subjected at any time to the temperature of the reaction chamber, as would be the case if the conditions at starting were obtained by the use of low electric power raising the temperature progressively and only causing in the protecting wall a moderate fall of temperature, proportional to the electrical power. As soon as the necessary temperature is attained the current is stopped and the heat of the reaction is substituted for it.

The first part s of the tube is coiled spirally for the purpose, during normal working, of causing the gases that are leaving to heat the gases that are entering the apparatus. If however no precaution were taken, it would be in this region that the greater part of the heat due to the electric current would be liberated during starting. To obviate this, these spirals may be formed of a metal which is a better conductor and which is thicker than the rest of the tube t or the said spirals may be short-circuited by means of a metal rod connected thereto. This latter method has the disadvantage of eliminating the slight flexibility of the spiral, which is useful for the purpose of compensating for the expansion and contraction of the tube, the lower extremity of which is held rigidly by the terminal plug P passing through the insulating joint j. The other electric terminal

is on the mass of the apparatus as shown, which is no disadvantage in view of the smallness of the voltage required, the smallness of the voltage greatly facilitating the insulating of the electric joint at j.

O is the opening in the tube S for the admission of the gases into the catalysing material.

The apparatus constructed as shown also presents other advantages. An intense heat being liberated from the outset, from one end to the other of the tube, a film of liquid can form from the outset, from one end of the protecting wall to the other, thus preventing local pressures from developing in this layer at the risk of crushing the tube T_1.

The cross-sectional area of the inlet pipe being small, there is no disadvantage in the fact that the entering gases descend as they become heated, for since their velocity is very high their flow cannot be affected by variations in density. The same remark applies to the external flow of the gases which are forced through the catalysing material.

It may happen that the liquid employed or the action of this liquid or of the hydrogen on the material forming the rings may liberate water vapour or other gases. The reacting gases, entering the catalysing material by the tube t, can only come into contact with this vapour or these gases on leaving the catalysing material, so the latter is not effected.

Finally, the use of a central gas supply tube considerably decreases the cross-sectional area of the apparatus as compared with the apparatus described in the aforesaid prior specifications.

HAVING NOW particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. An apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures in which gas is conveyed to a mass of catalysing material through a tube which serves to convey the gas into the apparatus and to act as an electric conductor for conveying current into the apparatus for starting or promoting the reaction, for the purpose described.

2. An apparatus as claimed in claim 1 and in which the said tube acts as an electric resistence or heating element for starting or promoting the reaction.

3. An apparatus as claimed in claim 1 or 2 and in which the said tube serves to act as a heat exchanger between the products of the reaction and the incoming gas.

4. An apparatus as claimed in claim 1, 2 or 3 and in which the said tube is provided with spikes or projections for the purpose described.

5. An apparatus as claimed in any of the preceding claims and in which the wall of the enclosure is protected by a badly conducting liquid wall in which is immersed solid material.

6. The employment in an apparatus as claimed in claim 5 of a relatively strong current from the commencement of the

(25)

3. The Applicants, therefore, apply for leave to file a Specification of the Invention pursuant to Part I of the Inventions and Designs Regulation, 1894.

THE COMMON SEAL of L'AIR LIQUIDE SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

L'AIR LIQUIDE
Soc. Anon. pour l'Etude et l'Exploitation
PARIS

"L'AIR LIQUIDE"
Soté Anon. p. l'Etude et l'Exploitation des Procédés G. Claude
Un Directeur.

We, the Applicants abovenamed, do declare that the facts stated in this Application are true to our knowledge, except as to matters stated on information and belief, and as to those matters we believe them to be true.

Dated this 22nd day of April 1920.

THE COMMON SEAL of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

L'AIR LIQUIDE
Soc. Anon. pour l'Etude et l'Exploitation
PARIS

"L'AIR LIQUIDE"
Soté Anon. p. l'Etude et l'Exploitation des Procédés G. Claude
Un Directeur.

(27

No lc 3035

G. R. S.VI—s.-v/21]

9 4c 60-21-8

Government of Mysore.

GENERAL DEPARTMENT.

Register No. 11 ..... of 1921.

Bangalore, the 23-11-1921.

WHEREAS an application, based on Indian application No 5729 of 1920, dated the 22nd ~~day of~~ April 1921 and received on the 1st August 1921, has been submitted under Section 5 of the Mysore Inventions and Designs Regulation, 1894, by L'Air Liquide Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude, of 48, Rue St Lazare, Paris (hereinafter referred to as "the applicant") for leave to file a specification of an invention for "Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures"

And whereas the applicant has duly complied with all the requirements of Section 5 of the said Regulation;

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulation.

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

7/11

For Secretary to the Govt. of Mysore,
General Department.

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant, and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the 17th day of December 1921.

21.12

For Secretary to the Govt. of Mysore,
General Department.

19/4

28

(Section 8 of the Inventions and Designs Regulation, 1894.)

8. (1) If within six months from the date of an order under Section 6, Sub-Section (1), or within such further time, not exceeding three months, as the Government of Mysore, in its discretion, may, on cause shown to its satisfaction and on payment of the fee prescribed in that behalf in the fourth schedule, see fit to allow, the applicant causes a specification of his invention to be filed in manner by this Part required, and the fee prescribed in the fourth schedule in respect of the filing of the specification to be paid, the applicant shall, subject to the other provisions of this Part, be entitled to the exclusive privilege of making, selling and using the invention in the Territories of Mysore, and of authorizing others so to do, for a term of fourteen years from the date of the filing of the specification.

(2) But an exclusive privilege in respect of an invention of a new manufacture shall, notwithstanding anything in Sub-Section (1), cease, if the inventor fails to pay, within the time limited in that behalf by the fourth schedule, any fee prescribed in that schedule in respect of the continuance of the privilege.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, an inventor fails to pay any such fee within the time so limited, he may apply to the Government of Mysore for an enlargement of the time for making the payment.

(4) Thereupon the Government of Mysore may enlarge the time accordingly, on payment of the fee prescribed in that behalf in the fourth schedule, and subject to the following conditions, namely :—

(*a*) the time for making a payment shall not in any case be enlarged for more than three months ; and

(*b*) if any suit is instituted in respect of an infringement of the exclusive privilege committed after a failure to make a payment within the time limited for the making thereof and before the enlargement of that time, the Court disposing of the suit may, if it thinks fit, refuse to award or give any damages in respect of the infringement.

W D 02300—GPB—500—24-11-16

G. R. S. VI—S-V/13]

(29

DRAFT.

SUBJECT.....

.....

.....

Section. Ltc
File No. 60-21-
Serial No. 9

No. Ic 3036/9

Diary No. of letter replied to.....

To

W. Grout Rote Esq
Solicitor
8 Hastings Street
Calcutta.

GENERAL AND REVENUE SECRETARIAT,
( )
the.....191 .

Sir

~~GENTLEMEN~~,

~~With reference to your letter No~~.....

~~dated the~~.....,.....~~191~~ .

Date of issue 23/11/21

I am directed to forward herewith marginally noted G. Of

Signed by Mr Rust

No. G. / G.-M. X dated the.....

191 , authorizing Messrs L'Air Liquide,
Societe Anonyme pour L'Etude
et L'Exploitation des Procedes
Georges Claude, of 48 Rue Lafayette, Paris,
to file a specification of ~~an~~ inventions ~~for~~
~~referred to in the above ref~~.....

.....

.....

and to request that the fact may be communicated to the party concerned.

I have, etc.

Mey 22/11

Secretary to Government. Geol.

Ic 3027 / Ltc 50-21-27
X Ic 3028 / Ltc 57-21-8
Ic 3029 / Ltc 55-21-9
Ic 3030 / Ltc 56-21-10
Ic 3031 / Ltc 56-21-11 } 23rd Nov 1921.
Ic 3032 / Ltc 5-7-21-7
Ic 3033 / Ltc 5-8-21-7
Ic 3034 / Ltc 5-9-21-7
Ic 3035 / Ltc 60-21-8

28209 2984 (30

17-12-21.

9 4 C 66-21-10

16 DEC 1921

From

Mr. W.Grant Rose

Solicitor

2, Hastings Street, Calcutta.

To

The Chief Secretary to the Government of

His Highness The Maharajah of Mysore

General Department

Bangalore, Mysore.

Calcutta 12th December 1921.

Sir,

17/12

Patent Register No. 11 of 1921/22.

With reference to your letter No. I C 3036/I & C 60-21-9 dated the 23rd ultimo forwarding the Government order granting leave to file specification in respect of the application of L'Air Liquide &c being Register No.11 of 1921/22 I beg to enclose herewith under registered cover two copies of the specification in respect of such application which together with the two copies of specification already submitted with the application will make four copies thereof. I also enclose one copy of the drawings which together with the two copies already sent with the application will make three copies thereof and I beg that the same may be filed in terms of the order granting leave.

I also beg to enclose herewith the Government order No.I C 3035/I & C 60-21-8 Register No. 11 of 1921/22 dated the 23rd November 1921 so that the certificate at foot thereof certifying that the specification has been filed and the fees paid may be duly signed and the order thus completed returned to me.

I am

Jre 60-2/-10(a)
D no 2984

Duplicate.

(To be returned to the General and Revenue Secretariat for being placed in the file.

1. No. 476
2. Date of Remittance 6-1-22
3. From whom received M. Ghosal Esq. Calcutta
4. Date of receipt of amount in the General and Revenue Secretariat 17-12-21
5. On what account Police fee in respect of Insurance No. 11-21
6. Amount (in figures and words) Rs Thirty only Rs 30/-
7. The head to which it should be credited.

(To be filled in by the Treasury.)

M Appanna Ln 6/1
for Secretary to Government, 6-1-22
XIII *General Department.*

The above amount has been duly received and credited in the Treasury on this date.

Date 6/1/22

Hd. Acctt. *Treasurer.* *Try. Officer.*

N. B.—Both the counterfoil and the duplicate to be returned to the General and Revenue Secretariat duly signed by the Treasury Department.

ab 11-21 ✓ 2 copies 3338 & 3348

9+c 60-21-11

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

GENERAL AND REVENUE SECRETARIAT

Bangalore, Dated 4/1/ *1922*

No. 3848

NOTIFICATION.

(PATENT)

The following specification of an invention has been filed in accordance with Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the ~~Chief~~ Secretary to the Government of His Highness the Maharaja of Mysore, and on payment of a fee of one Rupee.

General dept

By Liair Liquide, Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude, of 48, Rue St Lazare, Paris.

"Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures & pressures."

By Order,

2.1.22

~~The Chief~~ Secretary to Government.

lwb

To

The Compiler, Mysore Gazette, for publication.

735

9/1/22

11-21

G. R. S. VI—s-v/18

DRAFT.

SUBJECT:.....

.....

.....

No.

Diary No. of letter replied to.....

GENERAL AND REVENUE SECRETARIAT
( )
the.....*191*

Date of issue 11/1/22

Signed by W. J. A. G.

Section. 9 re
File No. 60-21
Serial No. 12

No 3848/2

To

W. Grant Rose Esq
Solicitor
2 Hastings Street
Calcutta

Sir,

With reference to your letter dated 12-12-21, I am directed to forward copy of a Notification No. 3848/9 re dated 60-21-11 Dy 11-1-22 issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations.)

The order granting permission to file specification is herewith returned, with the certificate at foot, duly filled in and signed.

I have, etc.,

21.22

For Secretary to Government.

9/1/22

List of enclosures.

Copied by..... ....

Examined by.....

WD 02297—GPB—1,000—2-2-18

(35/30

G. R. S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

, *the* 191 .

Date of issue 10/1/22

Signed by Mr J. A.G.

Section Gen

File No. 60-21

Serial No. 3

No. 3879-ST/Enc 1 to each

To (1) The Supdt, Govt Museum
(2) The Chief Engineer & Electrician
(3) The Secy, Bd of Scientific Advice.

I am directed to forward herewith for record in his office copy of a Specification of an invention for "Improvements in or relating to apparatus for use in carrying out endothermic chemical reactions under high temperatures & pressures by Latil Liquide, Societe Anonyme pour L'Etude Et L'Exploitation des procedes Georges Claude, of 48, Rue St Lazare, Paris. B.O.

over.

Mr 21.1.22
Dy Secy to Govt
Gen Dept

9/1/22

List of enclosures.

Copied by

Examined by

A P P L I C A T I O N.

TO THE DEWAN OF MYSORE.

THE APPLICATION of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, for leave to file a Specification under Part 1 of the Mysore Inventions and Designs Regulation, 1894.

1. The Applicants are in possession of an Invention for "Improvements in or relating to apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures" they are the Assignees of the Inventor thereof; and, to the best of their information and belief, the Invention is new within the meaning of Part I of the Inventions and Designs Regulation, 1894, and no circumstance exists which, if the Applicants are authorised to file a specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the Invention.

The Applicants have applied for a Patent in British India in respect of this Invention No. 5729 dated 10th day of June, 1920.

2. The following is a description of the invention:-

The apparatus comprises a tube T, assumed to be vertical, and which is protected by means of an inner tube T_1, surrounded by a pile of rings made of thermally insulating material immersed up to N in a molten material which is stable and not very volatile. The upper extremity of the tube T_1 is free to allow clearance for expansion. The other extremity of the tube T_1, terminating in the washer R, is fluid tight. A central tube t is provided both for the admission of the reacting gases and of the electric current and acts as an electrical resistance to produce heat for the purpose of starting the reaction. Furthermore this tube is provided with spikes which enable it to act as a barbed rod for the purpose of introducing the catalysing material without undue packing and preventing any possible movement, the said catalysing material being supported or not by a material such as asbestos.

Thin discs D of earthenware or china threaded on the tube before the spikes are attached prevent the possibility of short-circuiting.

In view of the enormous current density which can be employed owing to the highly compressed atmosphere in which the tube t is immersed, in view of the intensity of the gaseous current flowing through t it is possible to dissipate through the tube, notwithstanding the smallness of its cross-sectional area, a considerable amount of power, equal to or greater than the calorific power which will be developed by the reaction, three kilowatts per metre, for example, with a tube 12 millimetres in diameter. The flow of heat

is on the mass of the apparatus as shown, which is no disadvantage in view of the smallness of the voltage required, the smallness of the voltage greatly facilitating the insulating of the electric joint at j.

O is the opening in the tube S for the admission of the gases into the catalysing material.

The apparatus constructed as shown also presents other advantages. An intense heat being liberated from the outset, from one end to the other of the tube, a film of liquid can form from the outset, from one end of the protecting wall to the other, thus preventing local pressures from developing in this layer at the risk of crushing the tube T_1.

The cross-sectional area of the inlet pipe being small, there is no disadvantage in the fact that the entering gases descend as they become heated, for since their velocity is very high their flow cannot be affected by variations in density. The same remark applies to the external flow of the gases which are forced through the catalysing material.

It may happen that the liquid employed or the action of this liquid or of the hydrogen on the material forming the rings may liberate water vapour or other gases. The reacting gases, entering the catalysing material by the tube t, can only come into contact with this vapour or these gases on leaving the catalysing material, so the latter is not effected.

Finally, the use of a central gas supply tube considerably decreases the cross-sectional area of the apparatus as compared with the apparatus described in the aforesaid prior specifications.

HAVING NOW particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. An apparatus for use in carrying out exothermic chemical reactions under high temperatures and pressures in which gas is conveyed to a mass of catalysing material through a tube which serves to convey the gas into the apparatus and to act as an electric conductor for conveying current into the apparatus for starting or promoting the reaction, for the purpose described.

2. An apparatus as claimed in claim 1 and in which the said tube acts as an electric resistance or heating element for starting or promoting the reaction.

3. An apparatus as claimed in claim 1 or 2 and in which the said tube serves to act as a heat exchanger between the products of the reaction and the incoming gas.

4. An apparatus as claimed in claim 1, 2 or 3 and in which the said tube is provided with spikes or projections for the purpose described.

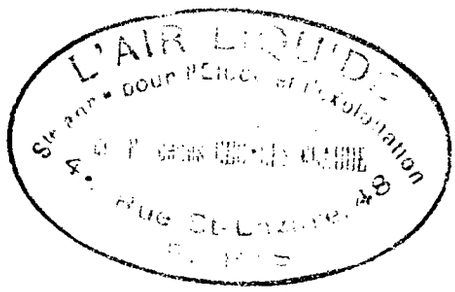
5. An apparatus as claimed in any of the preceding claims and in which the wall of the enclosure is protected by a badly conducting liquid wall in which is immersed solid material.

6. The employment in an apparatus as claimed in claim 5 of a relatively strong current from the commencement of the

3. The Applicants, therefore, apply for leave to file a Specification of the Invention pursuant to Part I of the Inventions and Designs Regulation, 1894.

THE COMMON SEAL of L'AIR LIQUIDE SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

"L'AIR LIQUIDE"
Soc. Anon. p. l'Etude et l'Exploitation des Procédés G. Claude
Un Directeur.



We, the Applicants abovenamed, do declare that the facts stated in this Application are true to our knowledge, except as to matters stated on information and belief, and as to those matters we believe them to be true.

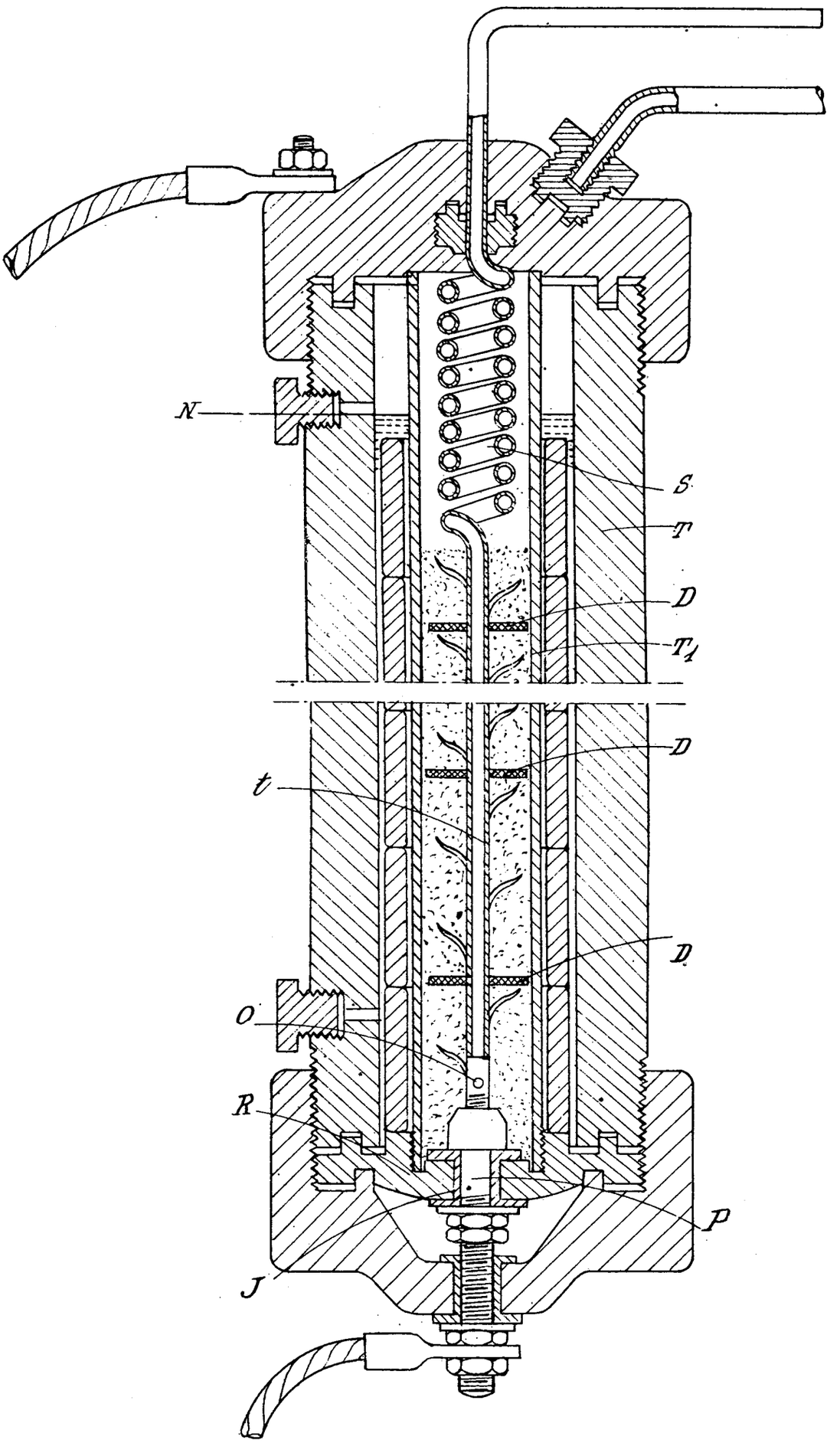
Dated this 22nd day of April 1926.

THE COMMON SEAL of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

"L'AIR LIQUIDE"
Soc. Anon. p. l'Etude et l'Exploitation des Procédés G. Claude
Un Directeur.

1,223,421.

No. of sheets - 1
Sheet No. - 1



L'air Liquide Societe Anonyme Pour L'Etude et L'Exploitation des Procedes Georges Claude
by their attorney
W. Grant Rose